

REMARKS

Claims 24-46 are pending in the application.

Claims 24-46 have been rejected.

Claims 24-46 remain pending in this application.

Reconsideration of the claims is respectfully requested.

I. CLAIM REJECTION UNDER 35 U.S.C. § 103

Claims 24-46 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Maya Unlimited 2.0, User's Guide* © 1998-1999, 59 pages, hereinafter "Maya" in view of U.S. Patent No. 5,619,625 to *Konno et al*, hereinafter "Konno". The Applicants respectfully traverse the rejection.

In rejecting claims under 35 U.S.C. § 103(a), the examiner bears the initial burden of establishing a *prima facie* case of obviousness. (*In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). See also *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984)). It is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. (*Id.* at 1073, 5 USPQ2d at 1598). In so doing, the examiner is expected to make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), viz., (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; and (3) the level of ordinary skill in the art. In addition to these factual determinations, the examiner must also provide "some articulated reasoning with some

rational underpinning to support the legal conclusion of obviousness.” (*In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir 2006) (cited with approval in *KSR Int'l v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007)).

Absent such a *prima facie* case, the applicants are under no obligation to produce evidence of nonobviousness. MPEP § 2142, p. 2100-125 (8th ed. rev. 5, August 2006). To establish a *prima facie* case of obviousness, three basic criteria must be met: *Id.* First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *Id.* Second, there must be a reasonable expectation of success. *Id.* Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *Id.* The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicants’ disclosure. *Id.*

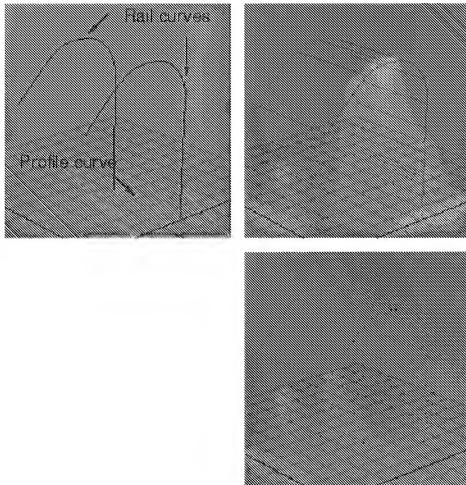
Applicant initially notes that nothing conclusively indicates that the “Maya” reference is prior art at all. The Examiner appears to have printed some web pages from caad.arch.ethz.ch on or about August 12, 2008, nearly seven years after the filing date of the instant application. While some pages bear various copyright dates, it is unclear to what these dates refer. Applicant has attempted to determine when the “ethz.ch” domain was registered, but this information was not available. Archive.org shows an “extruding surfaces” page in substantially similar form with a date of May 10, 2001, but this date would not make the web page prior art under 35 USC 102(b), nor is it clear that *all* teachings and pages relied upon by the Examiner appeared on that date or any other specific date.

Applicant respectfully requests that the Examiner provide an actual reference with some concrete date shows that the alleged prior art teachings were actually available as prior art at the time of filing of the instant application.

Maya does not appear to teach the features attributed by the Examiner. This analysis is made difficult by the Examiner's reference to page numbers that do not appear on web pages, and do not correspond to the page numbering that Applicant is able to generate. For example, the Examiner refers to "Pages 20-21, Extruding Surfaces", but there are no pages numbered 20-21. If the Examiner intends to continue to rely on the Maya reference, she is respectfully requested to include, in any further actions, a reproduction of the figure or teaching on which she relies, and a clear reference to the section and URL for that support.

Claim 24 requires "using a computer system, determining that a first surface of a drawing comprises a first plurality of curves constituting a $P \times 1$ surface condition, a $P \times 1$ surface condition being defined by a number of first curves equal to P and only one second curve, wherein P is an integer greater than zero". The Examiner appears to refer to the section "To build a birail surface from a single profile curve" on ModelingNURBS/modelNURBSsurfaces.fm8.html#168737 (all website references herein are to caad.arch.ethz.ch/info/maya/manual/UserGuide/ as of the time of filing this response). The upper left figure on the image reproduced below could be viewed as including the curves necessary to define a $P \times 1$ surface (e.g., as P rail curves and 1 profile curve), but no corresponding surface is shown, no teaching is shown that Maya's system actually uses these curves internally to define a surface, and it is clear that the remaining figures all show $N \times M$ surfaces.

Nothing in the “Extruding Surfaces” sections appear to have a relevant teaching.



Applicant further notes that the Examiner’s statement that “it is understood that additional curves may be added/selected such that a first surface having a Px1 condition is determined” is not supported in the reference, nor are the other statements throughout the rejection that are prefaced with “it is understood”. These “understandings” are not common knowledge, nor supported by any evidence in the record. “It is understood” appears to refer to the Examiner’s personal view as of

2009, and has nothing at all to do with the teachings of the references or what was known by those of skill in the art at the time of filing. This is not proper support for any rejection. All such "it is understood" statements are traversed as not meeting any evidentiary requirement for a proper rejection of claims. If the Examiner is relying on personal knowledge to support the finding of what is known in the art, the Examiner is respectfully requested to provide an affidavit or declaration setting forth specific factual statements and explanation to support the finding, as required by 37 CFR 1.104(d)(2).

Claim 24 also requires "determining that a second surface of a drawing comprises a second plurality of curves constituting a first $N \times M$ surface condition, a first $N \times M$ surface condition being defined by a number of third curves equal to N and a number of fourth curves equal to M , wherein N and M are integers greater than one." It is certainly true that several figures in Maya show $N \times M$ surfaces. The Examiner's further statement that "once an $N \times M$ surface has been generated ... it is understood that additional curves may be added./selected such that a first surface having a $P \times 1$ surface condition is determined adjacent to a second $N \times M$ surface having a first $N \times M$ surface...." is not taught by the reference, is unsupported in the reference, and is traversed.

Claim 24 also requires "converting the $P \times 1$ surface condition of the first surface into a second $N \times M$ surface condition to match the $N \times M$ surface condition of the second surface, the second $N \times M$ surface condition being defined by a number of fifth curves equal to N and a number of sixth curves equal to M , wherein N and M are integers greater than one". This is not taught by the references of record. Nothing in the references at all teaches converting the $P \times 1$ surface condition

of a first surface into an NxM surface condition that matches anything. There is no conversion of this sort taught at all. This reference discusses converting NURBS to polygonal geometry at ModelingPoly/PolyNURBS to Poly.fm.html, but does not discuss at all converting a Px1 surface condition to an NxM surface condition to match another NxM surface condition, as claimed. The Examiner admits this.

Maya does not teach at all teach constructing an N x M surface under the second N x M surface condition, where the second NxM surface condition is a conversion of a Px1 surface condition, as claimed. Nor does any other art of record.

A fundamental problem with the Examiner's rejection is that "surface conditions" refer to how the underlying CAD system or software defines and manipulates the various object models. A user manual such as the Maya reference does not describe this detail at all; it is only concerned with how a user interacts with the system and what is displayed on the screen. While the Examiner appears to have a large amount of conjecture about what the system might be doing in terms of defining, identifying, and manipulating various curves, surfaces, and surface conditions, this sort of detail simply isn't taught in this user manual, and the Maya reference cannot support the Examiner's rejection. While the Examiner may attempt to look at a figure from this manual and consider what *she* determines to be a surface condition, there is nothing in this reference at all that indicates what the Maya's software or system has determined to be the relevant conditions. As such, this manual cannot describe the operations of the computer systems, apparatuses, or software programs as claimed in the instant application.

For the claim limitation "converting the $P \times 1$ surface condition of the first surface into a second $N \times M$ surface condition to match the $N \times M$ surface condition of the second surface", the examiner also refers to Konno. The portions of Konno relied upon are reproduced below:

STEP 1: storing the control points and weights of the boundary curve in the memory device.

STEP 2: storing in the memory device the control points and weights of the curves which are connected to the end points of the boundary curve and which partly form the faces sharing the boundary curve.

STEP 3: checking $G_{sup.1}$ continuity at the end points of the boundary curve, and storing the results in the memory device.

STEP 4: determining whether the boundary curve is a rational curve or not, and if it is, go to STEP 8.

STEP 5: determining whether the boundary curve is a polynomial curve or not, and if it is, go to STEP 7, if it is a composite curve, go to STEP 6.

STEP 6: calculating the derivative vectors at the end points by using the control points and weights of the boundary curve stored at STEP 1, generating a imaginary polynomial curve, and storing the results in the memory device.

STEP 7: calculating the cross boundary derivatives by using the control points of either the boundary curve stored at STEP 1 and STEP 2 or the curve generated at STEP 6 and by using the condition of continuity determined at STEP 3.

STEP 8: calculating the cross boundary derivatives by using the control points and weights of the boundary curve stored at STEP 1 and STEP 2 and by using the condition of continuity determined at STEP 3. *Col. 5, lines 20-48.*

As is clear, while Konno does discuss some curve matching, there is not teaching at all in the passage above or the remainder of Konno of converting a $P \times 1$ surface condition of a first surface into an $N \times M$ surface condition to match the $N \times M$ surface condition of a second surface, as

claimed, nor of constructing an $N \times M$ surface under the second $N \times M$ surface condition, also as claimed. As these limitations are clearly not present in Konno, and are admitted by the Examiner as not being taught by Maya, it is clear that no art of record teaches this limitation.

All other independent claims include limitations such as those discussed above, that are not taught or suggested by any combination of the art of record. As such, all remaining claims distinguish over all art of record, and all rejections are traversed.

Accordingly, the Applicants respectfully request the Examiner to withdraw the § 103 rejection with respect to these claims.

CONCLUSION

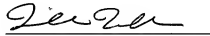
As a result of the foregoing, the Applicants assert that the remaining claims in the Application are in condition for allowance, and respectfully requests that this Application be passed to issue.

If any issues arise, or if the Examiner has any suggestions for expediting allowance of this Application, the Applicants respectfully invite the Examiner to contact the undersigned at the telephone number indicated below or at *michael.wallace@siemens.com*.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 19-2179.

Respectfully submitted,

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